Notice of Allowability	Application No.	Applicant(s)	
	09/825,589	ANDRE ET AL.	
	Examiner	Art Unit	
	Jonathan G. Sterrett	3623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *4-3-2006*.

2. ☒ The allowed claim(s) is/are *2-13,15-28 and 30-41*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date *6-22-06* .
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

Romain Jeanty
Primary Examiner
Art Unit 3623

Examiner's Amendment

1. An examiner's amendment to the record is attached to the Office Action. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Minh N. Nguyen, Reg. 53,864 on 22 June 2006. See attached interview summary.

2. Examiner amends **Claims 2, 3, 7, 9, 12, 13, 15, 17, 18, 24, 27, 28, 30, 31, 37, 40, and 41** and cancels **Claims 1, 14, 29 and 42-44**.

2. (Currently Amended) The method of claim [1] 12, wherein the user input that changes the number of employee designations has an effect chosen from a group including adding at least one employee designation and subtracting at least one employee designation.

3. (Currently Amended) The method of claim [1] 12, further comprising, determining a number of changes that can be made to the schedule during the scheduling method without simulating a proposed schedule, wherein determining

includes comparing a predetermined amount of allowed error and a cumulative error that results from estimating.

7. (Currently Amended) The method of claim 4, wherein calculating a total effective work a changed employee will perform comprises applying a function to: a number of skills of the changed employee; proficiencies of the changed employee; and priorities of the changed employee.

9. (Currently Amended) The method of claim [1] 12, wherein the schedule is for staffing a call center, and wherein the plurality of employees comprises a plurality of agents.

12. (Currently Amended) A computer-implemented method for generating a schedule for a plurality of employees ~~in a call center environment~~ with varying skill sets for a time period, wherein the plurality of employees have varying overlapping skill sets that enable them to perform various tasks, and wherein employees are shared across tasks within the time period, the method comprising:

receiving a plurality of user inputs to a scheduling program, including a number of employee designations each of which refers to a unique employee, and a number of skill sets each of which corresponds to one of the employee designations;

during the method for generating the schedule, determining an effect on the schedule of an incremental change to the plurality of user inputs, including:

receiving a user input that changes the number of employee designations by indicating at least one changed employee,

estimating an effect of the at least one changed employee on effective staffing levels for each of various tasks, wherein the estimating uses as an input a skill set associated with the at least one changed employee,

determining whether to simulate the schedule based at least in part on an adaptive algorithm, and

generating estimated effective staffing levels for each of the various tasks; and

dividing the method such that the method is performed on multiple parallel processors comprising, dividing a schedule into time intervals such that a schedule for each of the time intervals is processed by a different processor.

13. (Currently Amended) A computer-implemented method for generating a schedule for a plurality of employees ~~in a call center environment~~ with varying skill sets for a time period, wherein the plurality of employees have varying overlapping skill sets that enable them to perform various tasks, and wherein employees are shared across tasks within the time period, the method comprising:

receiving a plurality of user inputs to a scheduling program, including a number of employee designations each of which refers to a unique employee, and a number of skill sets each of which corresponds to one of the employee designations;

during the method for generating the schedule, determining an effect on the schedule of an incremental change to the plurality of user inputs, including:

receiving a user input that changes the number of employee designations by indicating at least one changed employee,

estimating an effect of the at least one changed employee on effective staffing levels for each of various tasks, wherein the estimating uses as an input a skill set associated with the at least one changed employee,

<u>determining whether to simulate the schedule based at least in part on an adaptive algorithm, and</u>

generating estimated effective staffing levels for each of the various tasks; and

dividing the method such that the method is performed on multiple parallel processors comprising, performing the scheduling process on one processor, and performing simulation on multiple different processors.

15. (Currently Amended) The system of claim [14] <u>27</u>, wherein the storage device that stores the instructions is accessed by the at least one processor through the network.

17. (Currently Amended) The system of claim [14] <u>27</u>, wherein the user input that changes the number of employee designations has an effect chosen from a group including adding at least one employee designation and subtracting at least one employee designation.

18. (Currently Amended) The system of claim [14] 27, wherein the instructions, when executed, further cause the at least one processor to determine a number of changes that can be made to the schedule during the scheduling process without simulating a proposed schedule, wherein determining includes comparing a predetermined amount of allowed error and a cumulative error that results from estimating.

24. (Currently Amended) The system of claim [14] 27, wherein the schedule is for staffing a call center, and wherein the plurality of employees comprises a plurality of agents.

27. (Currently Amended) A system for generating a schedule for a plurality of employees ~~in a call center environment~~ with varying skill sets for a time period, wherein the plurality of employees have varying overlapping skill sets that enable them to perform various tasks, and wherein employees are shared across tasks within the time period, the system comprising:

at least one server comprising at least one storage device; and

at least one client processor coupled to the server through a network, wherein the client processor is coupled to a plurality of storage devices, including a storage device that stores instructions that, when executed, cause the at least one client processor to,

receive a plurality of user inputs to a scheduling program, including a number of employee designations each of which refers to a unique employee, and a number of skill sets each of which corresponds to one of the employee designations, and

during execution of the scheduling program, determine an effect on the schedule of an incremental change to the plurality of user inputs, including:

receive a user input that changes the number of employee designations by indicating at least one changed employee,

estimate an effect of the at least one changed employee on effective staffing levels for each of various tasks, including estimating using as an input a skill set associated with the at least one changed employee,

determine whether to simulate the schedule based at least in part on an adaptive algorithm, and

generate estimated effective staffing levels for each of the various tasks,

wherein the instructions, when executed, further cause the at least one processor to divide the method such that the method is performed on multiple parallel processors comprising, dividing a schedule into time intervals such that a schedule for each of the time intervals is processed by a different processor.

28. (Currently Amended) A system for generating a schedule for a plurality of employees ~~in a call center environment~~ with varying skill sets for a time period, wherein the plurality of employees have varying overlapping skill sets that enable them to perform various tasks, and wherein employees are shared across tasks within the time period, the system comprising:

at least one server comprising at least one storage device; and

at least one client processor coupled to the server through a network, wherein the client processor is coupled to a plurality of storage devices, including a storage device that stores instructions that, when executed, cause the at least one client processor to,

receive a plurality of user inputs to a scheduling program, including a number of employee designations each of which refers to a unique employee, and a number of skill sets each of which corresponds to one of the employee designations, and

during execution of the scheduling program, determine an effect on the schedule of an incremental change to the plurality of user inputs, including:

receive a user input that changes the number of employee designations by indicating at least one changed employee,

estimate an effect of the at least one changed employee on effective staffing levels for each of various tasks, including estimating using as an input a skill set associated with the at least one changed employee,

determine whether to simulate the schedule based at least in part on an adaptive algorithm, and

generate estimated effective staffing levels for each of the various tasks,

wherein the instructions, when executed, further cause the at least one processor to divide the method such that the method is performed on multiple parallel processors comprising, performing the scheduling process on one processor, and performing simulation on multiple different processors.

30. (Currently Amended) The electromagnetic medium of claim [29] 40, wherein the user input that changes the number of employee designations has an effect chosen from a group including adding at least one employee designation and subtracting at least one employee designation.

31. (Currently Amended) The electromagnetic medium of claim [29] 40, wherein generating the schedule further comprises, determining a number of changes that can be made to the schedule during the scheduling process without simulating a proposed schedule, wherein determining includes comparing a predetermined amount of allowed error and a cumulative error that results from estimating.

37. (Currently Amended) The electromagnetic medium of claim [29] 40, wherein the schedule is for staffing a call center, and wherein the plurality of employees comprises a plurality of agents.

40. (Currently Amended) An electromagnetic medium containing executable instructions which, when executed in a processing system, cause the system to generate a schedule ~~in a call center environment,~~ for a plurality of employees with varying skill sets for a time period, wherein generating the schedule comprises:

receiving a plurality of user inputs to a scheduling program, including a number of employee designations each of which refers to a unique employee, and a number of skill sets each of which corresponds to one of the employee designations; and

during execution of the scheduling program, determining an effect on the schedule of an incremental change to the plurality of user inputs, including:

receiving a user input that changes the number of employee designations by indicating at least one changed employee;

estimating an effect of the at least one changed employee on effective staffing levels for each of various tasks, wherein the estimating uses as an input a skill set associated with the at least one changed employee;

determining whether to simulate the schedule based at least in part on an adaptive algorithm; and

generating estimated effective staffing levels for each of the various tasks,

wherein generating the schedule further comprises dividing the method such that the method is performed on multiple parallel processors comprising, dividing a schedule into time intervals such that a schedule for each of the time intervals is processed by a different processor.

41. (Currently Amended) An electromagnetic medium containing executable instructions which, when executed in a processing system, cause the system to generate a schedule ~~in a call center environment,~~ for a plurality of employees with varying skill sets for a time period, wherein generating the schedule comprises:

receiving a plurality of user inputs to a scheduling program, including a number of employee designations each of which refers to a unique employee, and a number of skill sets each of which corresponds to one of the employee designations; and

during execution of the scheduling program, determining an effect on the schedule of an incremental change to the plurality of user inputs, including:

receiving a user input that changes the number of employee designations by indicating at least one changed employee;

estimating an effect of the at least one changed employee on effective staffing levels for each of various tasks, wherein the estimating uses as an input a skill set associated with the at least one changed employee;

determining whether to simulate the schedule based at least in part on an adaptive algorithm; and

generating estimated effective staffing levels for each of the various tasks,

wherein generating the schedule further comprises dividing the method such that the method is performed on multiple parallel processors comprising, performing the scheduling process on one processor, and performing simulation on multiple different processors.

Allowable Subject Matter

3. **Claims 2-13, 15-28 and 30-41** are allowed.

Reasons for Allowance

4. The following is a statement of reasons for the indication of allowable subject matter:

None of the prior art of record, taken individually or in any combination, teach, inter alia, receiving a plurality of user inputs to a scheduling program including a number of employee designations that each refer to a unique employee, during the method for generating the schedule, determining an effect on the schedule of an incremental change to the plurality of user inputs, including, receiving a user input that changes the number of employee designations by indicating at least one changed employee; estimating the effect of the at least one changed employee on effective staffing levels for each of the various tasks; and determining whether to simulate the schedule based at least in part on an adaptive algorithm; generating estimated effective staffing levels for each of the various tasks where the estimating uses as an input a skill set associated with the at least one changed employee; and a number of skill sets that each correspond to one of the employee designations; and dividing the method such that the method is performed on multiple parallel processors comprising, dividing a schedule into time intervals such that a schedule for each of the time intervals is processed by a different processor, as recited in independent **Claims 12, 13, 27, 28, 40 and 41**.

The novelty of the invention is in the combination of the limitations cited in independent **Claims 12, 13, 27, 28, 40 and 41** and not in any specific individual claim limitation.

The prior art reference most closely resembling the applicants claimed invention is Leggett US 5,185,780 (hereinafter Leggett). While Leggett discloses:

receiving a plurality of user inputs to a scheduling program including a number of employee designations that each refer to a unique employee, during the method for generating the schedule, determining an effect on the schedule of an incremental change to the plurality of user inputs, including, receiving a user input that changes the number of employee designations by indicating at least one changed employee; estimating the effect of the at least one changed employee on effective staffing levels for each of the various tasks; and determining whether to simulate the schedule based at least in part on an adaptive algorithm; generating estimated effective staffing levels for each of the various tasks.

However, Leggett fails to disclose:

wherein the estimating uses as an input a skill set associated with the at least one changed employee; and a number of skillsets that each correspond to one of the employee designations; and dividing the method such that the method is performed on multiple parallel processors comprising, dividing a schedule into time intervals such that a schedule for each of the time intervals is processed by a different processor; as recited in **Claims 12, 13, 27, 28, 40 and 41**.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan G. Sterrett whose telephone number is 571-272-6881. The examiner can normally be reached on 8-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tariq Hafiz can be reached on 571-272-6729.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JGS

6-22-2006

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